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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/752,352

12/29/2000

Arthur Ray Alexander

9216

8424

26890

7590

08/14/2002

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EXAMINER

PATEL, ISHWARBHAI B

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 08/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/752,352

Applicant(s)

ALEXANDER ET AL.

Examiner

Ishwar (I. B.) Patel

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on April 28, 2002, paper No. 6.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-8, 17, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 17, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. New Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The applicant is claiming a void in the power layer and one resistive element formed in the void. If the void is filled with a resistive material, the void will not be there as a part of the final structure. The void is only an intermediate step and not a structural limitation in the final structure.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1,2,6,17 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Archambeault, US Patent No. 6,418,031.

Regarding claim 1, Archambeault discloses a printed circuit board that includes:

a power layer for use in providing electrical power to circuit components (power layer 32, see figure 3-4, column 4, line 3-40);

a ground layer for use in carrying electrical current away from the circuit components (ground plane 34, see figure 3-4, column 4, line 3-40); and

a loss element residing in an internal layer of the circuit board and connected electrically between the power layer and ground layer (series resistor and capacitor element 54, see figure 3-4, column 4, line 53-63).

Regarding claim 17, Archambeault discloses all the features of the claimed invention including the electronic circuitry as the printed circuit board inherently includes the circuitry.

Regarding claim 2, Archambeault further discloses a capacitive element connected in series with the loss element (series resistor and capacitor element 54, see figure 3-4, column 4, line 53-63).

Regarding claim 20, Archambeault discloses all the features of the claimed invention including the circuitry, resistive element and the capacitive element as applied to claim 1, 2 and 17.

Regarding claim 6, Archambeault further discloses the loss element is a resistor.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7,8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Archambeault, US Patent No. 6,418,031 as applied to claims 1,2,6,17 and 20 above, and further in view of Klaser, US Patent No. 4,870,746.

Regarding claim 7, though Archambeault does not disclose any specific value of the resistor, it will depend upon the specific system requirement. Resistor with 1-10 ohms resistance are known in the art and as disclosed by Klaser the resistor with

specific value can be obtained by blending resistive paste with different resistivities, see Klaser column 4, line 61-68. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the circuit board of Archambeault with resistive value 1-10 ohms, as taught by Klaser, in order to have desired control on various functions of the resistor including noise control.

Regarding claim 8 and 19, though, Archambeault does not disclose the specific material, the polymer thick film material as claimed in claim 8 or polymer thick film resistor as claimed in claim 19, the use of polymer thick film resistors are known in the art for sandwich resistor in the internal layer of the circuit board. Klaser discloses such polymer thick film resistor for accommodating multiple resistors in the system. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the circuit board of Archambeault with polymer thick film resistor, as taught by Klaser, in order to accommodate multiple resistors in the system. Further, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

7. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Archambeault, US Patent No. 6,418,031 as applied to claims 1,2,6,17 and 20 above, and further in view of Ehman, US Patent No. 6,021,050, hereafter Ehman and Nakanishi et al., US Patent No. 5,110,664, hereafter Nakanishi.

Regarding claim 3 and 5, locations of the loss element and capacitive element in the printed circuit board, the loss element and the capacitive element reside in two different layers of the circuit board as claimed in claim 3 and the loss element is in an internal layer of the circuit board. However the relative location of such component will depend upon the number of such component needed in the system and the space to accommodate other wiring. Ehman discloses the resistor and the capacitor on different layer and Nakanishi disclose the resistor on power layer; see Nakanishi figure 8a, column 16, line 37-68. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the circuit board of Archambeault with the features as claimed in claim 3 and 5, as taught by Ehman and Nakanishi, in order to accommodate multiple component having space adjusted for the traces and the components.

Response to Arguments

8. Applicant's arguments with respect to claims 1 and 17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (703) 305 2617. The examiner can normally be reached on M-F (6:30 - 4) First Friday Off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L Talbott can be reached on (703) 305 9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3431 for regular communications and (703) 305 7724 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

ibp
July 31, 2002


Kenneth
Primary Examiner